

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 61861 PCT		FOR FURTHER ACTION		See Form PCT/IPEA416
International application No. PCT/US2004/027852		International filing date (day/month/year) 27.08.2004	Priority date (day/month/year) 29.08.2003	
International Patent Classification (IPC) or national classification and IPC B01D53/04, F01N3/28, C04B38/00, B01J35/04, B01D39/20				
Applicant DOW GLOBAL TECHNOLOGIES INC.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains Indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 16.02.2005		Date of completion of this report 16.09.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Bogaerts, M Telephone No. +31 70 340-		



**INTERNATIONAL PRELIMINARY REPORT
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-11 as originally filed

Claims, Numbers

1-10 as originally filed

Drawings, Sheets

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 10

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 10

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See separate sheet for further details

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-9 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6,7
	No: Claims	1-5,8,9
Inventive step (IS)	Yes: Claims	
	No: Claims	1-9
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item IV.

The separate inventions/groups of inventions are:

1-9

Diesel exhaust filter element having a rigid porous wall portion being coated with a catalyst and an adsorbent, the rigid porous wall comprising an acicular ceramic

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Process for depositing precipitated metal ions on the surfaces of a rigid porous wall

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

The international application comprises 4 independent claims (1,6,8,10) and 6 dependent claims. According to the administrative instructions under the PCT, unity of invention has to be considered in the first place only in relation to the independent claims.

I. Independent claims 1,6,8,10.

I.1 Independent claim 1 is directed to a Diesel exhaust filter element of the type having a rigid porous wall portion being coated with a precious metal catalyst and a NOx absorbent, the rigid porous wall comprising an acicular ceramic (wording to be taken from claim 1).

I.2 Independent claim 6 is directed to a Diesel exhaust filter element of the type having a rigid porous wall portion comprising three layers, the rigid porous wall comprising an acicular ceramic (wording to be taken from claim 6).

I.3 Independent claim 8 is directed to a Diesel exhaust filter element of the type having a rigid porous wall portion comprising two layers, the rigid porous wall comprising an acicular ceramic (wording to be taken from claim 8).

I.4 Independent claim 10 is directed to a process for depositing precipitated metal ions on the surfaces of a rigid porous wall comprising four steps: forming liquid solution of metal ions, gelling agent and precipitating agent, filling the pore volume of the rigid porous wall,

elevating the temperature of the filled structure, further elevating the temperature of the filled structure (wording to be taken from claim 10).

The special technical features common to all the claims are: the rigid porous wall and the "precipitated metal" (= metal coating).

US-A1-2002/0175451 discloses a rigid porous wall coated with a metal catalyst coating.

Consequently there is no corresponding special (new and inventive) technical feature linking the independent claims 1,6,8 on the one hand and claim 10 on the other hand and therefore there is lack of unity a posteriori between claims 1,6,8 on the one hand and claim 10 on the other hand (Rule 13(1) and (2) PCT).

II. The application can be divided in the following two groups of inventions.

II.1 A Diesel exhaust filter element comprising the features according to claims 1-9.

II.2 A process for depositing precipitated metal ions comprising the features of claim 10.

According to Art. 17 (3)(a) the ISA shall establish the international search report on those parts of the international application which relate to the invention first mentioned in the claims.

Re Item V.

1. The following documents are referred to in this communication:

D1: US 2002/175451 A1

D2: US 2001/032459 A1

D3: US 5,098,455 A

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 and 8 is not new in the sense of Article 33(2) PCT.

Document D1 discloses a Diesel exhaust filter element of the type having a rigid

porous wall portion comprising an acicular mullite. The porous wall portion is coated with a precious metal catalyst and a NOx absorbent.

3. 1 The addition of a third layer (claim 6) does not solve any particular problem and can therefore not be considered as involving an inventive step.
- 3.2 It is further submitted that document D3 solves the problem of reducing the pressure drop in a Diesel exhaust filter element in the same way as the alleged invention. It would therefore be obvious for a skilled person, when confronted with this problem, to replace a ceramic support as used e.g. in the state of the art document D2, by an acicular mullite.
The subject-matter of claims 1, 6 and 8 is not inventive in the sense of Article 33(3) PCT.
4. Dependent claims 2-5, 7 and 9 do not contain any features which, in combination with the features of any claim to which /they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows: the additional features are known from D1 and/or D2 and/or D3.

Re Item VIII.

Although claims 1, 6 and 8 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.